

Application No. 09/675,525

Amendment dated March 25, 2005

Amendment under 37 CFR 1.116 Expedited Procedure Examining Group

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A ~~replicable-genetic-package~~ bacteriophage displaying a compound other than a polypeptide expressed by the ~~replicable-genetic-package~~ bacteriophage, wherein the ~~replicable-genetic-package~~ bacteriophage comprises a heterologous nucleic acid tag that can be decoded to identify a characteristic of the compound, and the heterologous nucleic acid tag is a nucleic acid segment other than a segment that encodes for a polypeptide displayed on the bacteriophage.

2-3. (cancel)

4. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim ~~[[3]]~~ 1, wherein the bacteriophage is a filamentous phage.

5. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim ~~[[3]]~~ 1, wherein the bacteriophage is a non-filamentous phage.

6. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim ~~[[3]]~~ 1, wherein the bacteriophage is an icosahedral phage.

7. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein the compound is a small molecule.

8. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein the compound comprises a polypeptide linked to a small molecule.

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9. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 1, wherein if the compound is a peptide then the ~~replicable-genetic-package bacteriophage~~ and the compound are attached by other than a peptide linkage.

10. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 1, wherein the ~~replicable-genetic-package bacteriophage~~ and compound are joined via a covalent bond formed between an endogenous functional group on the ~~bacteriophage-replicable-genetic-package~~ and a functional group borne by the compound.

11. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 1, wherein the ~~replicable-genetic-package bacteriophage~~ bears a package linker and the compound is attached to the ~~replicable-genetic-package bacteriophage~~ by association with the package linker.

12. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 1, wherein the compound bears a compound linker and the compound is attached to the ~~replicable-genetic-package bacteriophage~~ via the compound linker.

13. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 1, wherein the ~~replicable-genetic-package bacteriophage~~ bears a package linker and the compound a compound linker and the compound is attached to the ~~replicable-genetic-package bacteriophage~~ by association of the linkers.

14. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 13, wherein the ~~replicable-genetic-package bacteriophage~~ and the compound are linked by a non-covalent interaction.

15. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 13, wherein the package linker and compound linker are members of a binding pair.

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16. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 15, wherein binding pair members comprise a binding protein and a ligand having specific binding affinity for the binding protein.

17. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 16, wherein the binding protein is an antibody and the ligand is a haptan.

18. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 15, wherein the binding pair members comprise biotin and either avidin, streptavidin or neutravidin.

19. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 15, wherein the binding pair members comprise peptide dimerization domains.

20. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 13, further comprising a bridging linker that effects association of the package linker and the compound linker.

21. (Withdrawn and currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 20, wherein at least one of the linkers is a reversible linker.

22. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein the ~~replicable-genetic-package~~ bacteriophage displays a plurality of compounds.

23. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein ~~the replicable-genetic-package is a phage and~~ the plurality of compounds are attached to different coat proteins having different sequences, and each of the different coat proteins bears one or more of the compounds.

24. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 23, wherein the plurality of compounds are the same.

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25. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 24, wherein at least some of the plurality of compounds are different.

26. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the ~~replicable-genetic-package~~ bacteriophage is a phage and the plurality of compounds are attached to a plurality of coat proteins having the same sequence, and each of the plurality of coat proteins bears one or more of the compounds.

27. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 26, wherein the plurality of compounds are the same.

28. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 26, wherein at least some of the plurality of compounds are different.

29. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the plurality of compounds are attached to a single coat protein.

30. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the ~~replicable-genetic-package~~ bacteriophage is a phage and bacteriophage bears a plurality of exogenous attachment sites of the same type on a single coat protein or a plurality of coat proteins of the same sequence such that each of the coat proteins bear one or more of the attachment sites, and the plurality of compounds are associated with the ~~replicable-genetic-package~~ bacteriophage via the attachment sites.

31. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the ~~replicable-genetic-package~~ bacteriophage is a phage and bears a plurality of exogenous attachment sites of the same type on a plurality of coat proteins having different sequences such that each of the coat proteins bear one or more of the attachment sites, and the plurality of compounds are associated with the ~~replicable-genetic-package~~ bacteriophage via the attachment sites.

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32. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the ~~replicable-genetic-package is a phage and~~ bacteriophage bears a plurality of exogenous attachment sites of different types on a single coat protein or a plurality of coat proteins of the same sequence such that each of the coat proteins bear one or more of the attachment sites, and the plurality of compounds are associated with the bacteriophage ~~replicable-genetic-package~~ via the attachment sites.

33. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 22, wherein the ~~replicable-genetic-package is a phage and~~ the bacteriophage bears a plurality of exogenous attachment sites of different types on a plurality of coat proteins having different sequences such that each of the coat proteins bear one or more of the attachment sites, and the plurality of compounds are associated with the ~~replicable-genetic-package~~ bacteriophage via the attachment sites.

34. (Canceled)

35. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein the heterologous nucleic acid tag encodes the identity of the compound.

36. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein the heterologous nucleic acid tag encodes a value or symbol assigned to the compound.

37. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 1, wherein

(a) ~~the bacteriophage is a phage, and~~

(b) the heterologous nucleic acid tag is inserted into a segment of the genome of the ~~phage~~ bacteriophage such that it is flanked by a heterologous promoter and a heterologous restriction site, the heterologous promoter being in operable linkage with the heterologous nucleic acid tag.

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38. (Currently amended) The ~~replicable-genetic-package~~ bacteriophage of claim 37, wherein the heterologous promoter is selected from the group consisting of a phage T7 promoter, a T3 promoter and a sp6 promoter.

39. (Canceled)

40. (Currently amended) The ~~replicable-genetic-package~~ collection of bacteriophage of claim ~~127~~ 39, wherein each of the heterologous nucleic acid tags from the different ~~replicable-genetic-package~~ bacteriophage are isothermal tags.

41. (Cancel)

42. (Currently amended) The ~~replicable-genetic-package~~ collection of bacteriophage of claim ~~39-127~~, wherein each ~~replicable-genetic-package~~ bacteriophage bears a different compound from a combinatorial library of small molecules.

43. (Withdrawn and currently amended) The ~~collection of replicable-genetic package bacteriophage~~ of claim ~~39 127~~, wherein at least a plurality of the ~~replicable-genetic packages bacteriophages~~ are directly attached to the compound by a covalent bond formed from an endogenous functional group on the ~~replicable-genetic-package bacteriophage~~ and a functional group borne by the compound.

44. (Currently amended) The ~~replicable-genetic-package~~ collection of bacteriophage of claim ~~39 127~~, wherein at least a plurality of the ~~replicable-genetic-package bacteriophage~~ s are attached to the compound via one or more linkers.

45. (Currently amended) A ~~replicable-genetic-package~~ bacteriophage displaying a compound other than an expressed polypeptide, wherein the ~~replicable-genetic package bacteriophage~~ and the compound are attached via a linker, and the heterologous nucleic acid tag is a nucleic acid segment other than a segment that encodes for a polypeptide displayed on the bacteriophage.

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46. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the ~~replicable-genetic-package bacteriophage~~ is a collection of replicable ~~genetic-packages bacteriophages~~, each replicable-genetic-package bacteriophage in the collection bearing a different compound.

47. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the compound is a small molecule.

48. (Cancel)

49. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the linker is a package linker attached to the ~~replicable-genetic-package bacteriophage~~ and the compound is attached to the ~~replicable-genetic-package bacteriophage~~ via the package linker.

50. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the linker is a compound linker borne by the compound and the ~~replicable-genetic-package bacteriophage~~ is attached to the compound via the compound linker.

51. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the linker is a package linker borne by the ~~replicable-genetic-package bacteriophage~~, and the compound bears a compound linker and the compound is attached to the ~~bacteriophage replicable-genetic-package~~ by association of the package and compound linkers.

52. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 51, wherein the ~~replicable-genetic-package bacteriophage~~ and the compound are attached via a non-covalent interaction between package and compound linkers.

53. (Withdrawn and currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 51, wherein the ~~replicable-genetic-package bacteriophage~~ and the compound are attached via a covalent bond formed between package and compound linkers.

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54. (Currently amended) The ~~replicable-genetic-package bacteriophage~~ of claim 45, wherein the ~~replicable-genetic-package bacteriophage~~ displays a plurality of compounds.

55.-106 (Canceled)

107-126. (Canceled)

127. (Currently Amended) A collection of ~~replicable-genetic-packages bacteriophages~~, each displaying a compound other than a polypeptide expressed by the ~~replicable-genetic-package bacteriophage~~ and comprising a heterologous nucleic acid tag that can be decoded to identify a characteristic of the compound, and the heterologous nucleic acid tag is a nucleic acid segment other than a segment that encodes for a polypeptide displayed on the bacteriophage. and wherein at least some of the ~~replicable-genetic-packages bacteriophages~~ display different compounds and ~~replicable-genetic-packages bacteriophages~~ displaying different compounds harbor different tags.